

DOCUMENT RESUME

ED 152 520

SI 023 974

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TITLE Adapted Suggestology and Elementary Science at Bloomsburg State College.
PUB DATE Mar 77
NOTE 8p.; Paper presented at the annual meeting of the National Science Teachers Association (Cincinnati, Ohio, March 1977); Not available in hard copy due to marginal legibility of original document

EDRS PRICE MF-\$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS *Educational Research; Higher Education; *Methods Courses; Science Education; *Teacher Education; *Teaching Methods
IDENTIFIERS Research Reports; *Suggestology

ABSTRACT

Reported is an experimental use of the suggestology instructional method to teach an elementary science methods course. The suggestology method, developed by Dr. Georgi Lovancv, University of Sofia, Bulgaria, increases student learning by having students participate in special relaxation exercises and by using widely varying teacher intonation with and without background music. Results indicated a dramatic increase in "A" grades among students in the suggestology course. (SI)

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ADAPTED SUGGESTOLOGY AND
ELEMENTARY SCIENCE AT BLOOMSBURG STATE COLLEGE

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Adapted Suggestology And
Elementary Science At Bloomsburg State College¹

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Background of the Study

Several years ago, the researcher read about a new method of relaxed teaching and learning in an inappropriately entitled book, Psychic Discoveries Behind The Iron Curtain.² The method was entitled Suggestology and was the brainchild of a remarkable researcher, educator, and medical practitioner, Dr. Georgi Lozanov, University of Sofia, Bulgaria.

The Lozanov method deals with relaxed teaching and learning methods which can enable students to gain a high degree of mastery of a foreign language in a remarkably short period of time by the elimination of standard barriers to learning which hold back easy assimilation of knowledge. Learning is enhanced, and retention rates are quite high, even after one to two years have passed.

This method has spread to Canada, Austria, Russia, and other

¹Originally presented at the 25th Annual Convention, N.S.T.A., March 25-29, 1977, Cincinnati, Ohio.

²Ostrander, S. and Schroeder, L., Psychic Discoveries Behind The Iron Curtain, Prentice-Hall, Inc., New Jersey, c. 1970, pp. 298-303.

European countries and is currently spreading throughout the U.S. through the efforts of Dr. Carl Schleicher, Ph.D., President of Mankind Research Foundation and Lozanov Learning Institute in Washington, D.C.

The Bloomsburg State College reseacher, contemplating the possibilities of this method as applications in his elementary science methods course, attended week-end study sessions and seminars at the Institute as well as the First International Seminar on Suggestology held in Washington in 1975. At this latter meeting, a personal conference with Dr. Lozanov allowed the writer to clear up misconceptions of the method and spurred interest in attempting to try this method or adaptations of the method in the methods course at Bloomsburg.

Definitions of Terms

1. Suggestology - a method of teaching-learning which was started in Sofia, Bulgaria, by Dr. Georgi Lozanov, approximately 20 years ago. At his Institute, foreign language students are first relaxed with specialized techniques incorporating Yoga-type exercises, relax in environmentally controlled classrooms with recliner chairs, receive new material in different levels of teacher intonation both with and without music background, and do role-playing socio-drama as reinforcement. Ninety and above percentage retention over a year to two years is normal, and the student learns at a remarkably accelerated rate.
2. Adapted Suggestology - a method of teaching-learning, based on the Lozanov Method above, with adaptations necessitated by the peculiarities of American higher education classrooms and more rigid timetables than those found in Bulgaria. In this experimental approach in the United States, elementary science methodology is substituted for the traditional instruction in foreign languages as started by Lozanov.
3. Autogenics - a method of relaxing the body in a short period of time (under five minutes). First developed in Europe, the method involves the steps of deep breathing, and gradual tightening of the body muscles from the feet to the head. The tightening (tensing) is then reversed by releasing the ten-

sion from the head to the feet with personal mind control.

4. Levels of Intonation - a method of oral delivery to the student of new material by the teacher or by use of the teacher's voice on tape recorder. The new material (concepts) can be, for example, shouted, spoken in a normal voice, whispered, etc. Variety is essential to the method.

Student Population and Groups

It was decided to use a Spring, Summer, and Fall enrollment of juniors and seniors taking the Elementary Science methods course (3 hrs., 3 cr.) in 1975 as the Control Group, hereinafter known as the CG. The CG was composed of approximately 220 students who were taught by the traditional lecture-demonstration method in the Spring semester, Summer Session (6 weeks, 1 section), and Fall Semester. The Spring and Fall semesters each contained 4 sections, making a total CG of 9 sections of juniors and seniors. As a general policy, it was decided to present exactly the same information, methods, and concepts to the CG as would be presented to the Experimental Group.

The Experimental Group, hereinafter known as the EG, was composed of the Spring, Summer, and Fall enrollment of juniors and seniors taking the same science course in 1976. The EG was composed of approximately 220 students who were taught by Adapted Suggestology methods for one-half of each semester or summer session, with the remainder of the course time being devoted to the student teaching of sample science lessons to peers exactly as done in the CG. In summary, each of the groups had one-half of the course time devoted to traditional methods or Adapted Suggestology, and one-half of the course devoted to the teaching of a demonstration-experiment "discovery" type lesson.

The Adapted Suggestology methods differed from Dr. Lozanov's "pure" Suggestology in the following ways:

1. Dr. Lozanov uses reclining chairs; at B.S.C. old, discarded, overstuffed student lounge chairs were used which had been rescued from a demolished dormitory.
2. Dr. Lozanov uses the teacher's voice on different intonational levels; at B.S.C. the adapted version was composed of a tape player playing a recording of the professor's (researcher's) voice because the four sections met back-to-

back and his voice could not stand the strain.

3. Dr. Lozanov uses highly tested background music accompanying the intonational presentations; at B.S.C. tape recordings of Mozart, Haydn, and Liszt were used.
4. Dr. Lozanov uses classes with very small enrollments, usually 15; due to necessity, the B.S.C. counterpart used 28-32 students in most of the sections and sessions.
5. Dr. Lozanov uses drama presentations on a small classroom stage to reinforce the student learning with sociodramas; this was not possible in the small, standard American college classroom.
6. Dr. Lozanov uses a special room environment; at B.S.C. some plastic flowers in a vase, a hanging plastic pot of real flowers, colorful pictures of physics, botany, and zoology scenes, and inspirational quotations printed on cards were used to enliven the otherwise deadly atmosphere of the room.
7. Dr. Lozanov uses specialized relaxing methods for his students; at B.S.C. the Autogenics method was used for students to self-relax themselves prior to the introduction of the new material.
8. Dr. Lozanov uses specific lengths of time for teaching his sessions; in the adapted method the students on Tuesday-Thursday sequences had $1\frac{1}{2}$ hrs. each meeting; the Monday-Wednesday-Friday sequences had 50 minute periods each meeting--the summer sessions were each $1\frac{1}{2}$ hrs. in length but met each day for 6 weeks.

Evaluation Methods

Students in both the EG and CG were graded by percentages with the A grade having a range of 92%-100%, the B grade having a range of 82%-91%, etc. Three tests were administered each semester/session. Each test was objective (machine corrected, true-false, multiple choice) but the final examination in each instance had some essay items added to the objective portion. The only way a student could gain percentage points up to 5% points was to complete all course projects on time and in an acceptable manner. These additional project points were added to the final mean average before the letter grade was assigned. The projects included

but were not limited to the (1) construction of a demonstration stand, (2) completion of a picture file categorized into 14 areas of science, and (3) the lesson planning and teaching of one "discovery-type" experiment or demonstration lesson in front of peers for 20-25 minutes.

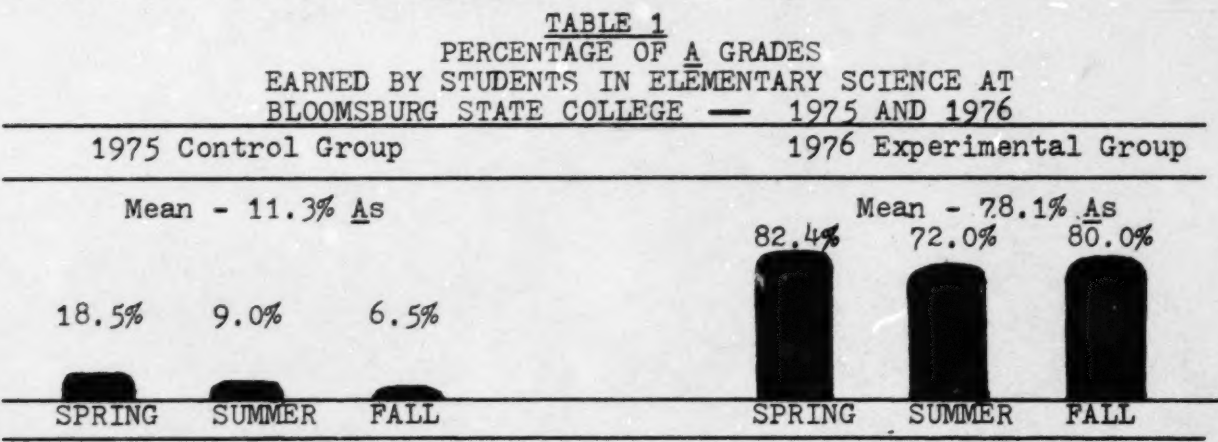
Attendance was tightly controlled with one "personal" cut allowed for any reason, and 3% points deducted for each unexcused absence from class. Accident, illness, circumstances beyond a students' control were acceptable excuses for absence; if these reason were not available, the percentage points were deducted from the final mean average before letter grades were assigned.

The student could opt to merely receive his grade or might request a personal conference in which the examination items were gone over in detail with the instructor.

Findings

Final grades were computed for each student by averaging the 3 examination grades, adding the 5% points for projects, and deducting any percentages for unexcused cuts. For the Fall, Spring, and Summer classes in the CG the percentage of A grades earned was 6.5%, 18.5% (an exceptionally high performing student group), and 9.0%.

This finding was in sharp contrast to the percentage of A grades in the EG in the Fall, Spring, and Summer classes the following year with Adapted Suggestology. With the experimental procedures A grade percentages jumped to 80.0%, 82.4%, and 72.0%, indicating an earned final grade advantage of some significance for the EG. The comparative results are shown in the following TABLE 1.



Summary

During 1975 and 1976 an experimental study was undertaken at Bloomsburg State College, Bloomsburg, Pennsylvania, using college juniors and seniors enrolled in the elementary science methods course. Approximately 220 students made up the Control Groups and received traditional instruction with lecture-demonstration in 2 regular semesters and 1 summer session. Approximately 220 students of junior and senior levels made up the Experimental Groups and received Adapted Suggestology instruction of the same material in 2 regular semesters and 1 summer session. The Experimental Groups received instruction in 1976 and the Control Groups received instruction in 1975.

When final grades were averaged and letter grades assigned for the Experimental and Control Groups, it was found that a substantially higher student achievement was evident in the Experimental Groups taught by Adapted Suggestology.

Conclusions And Recommendations

Teaching college juniors and seniors elementary science methods by means of the European method of Adapted Suggestology originated by Dr. Georgi Lozanov, can result in a higher achievement gradewise with relaxed procedures of non-conventional techniques. The findings suggest further study is necessary, especially in the area of long-term retention of basic concepts as discovered by Dr. Lozanov. In addition, it might be possible to schedule one section for instruction with a 3-hr. instructional period broken by a five-minute break time to ascertain whether or not the high concentration of instruction can be handled by each student, and a careful checking of the achievement earned in relation to the spaced learning of 50-minute and 1½ hr. periods.

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